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PTO/SB/21 (05-03)

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TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Application Number	10/778,009	
	Filing Date	February 11, 2004	
	First Named Inventor	Erik C. Scher	
	Group Art Unit	1753	
	Examiner Name	Unassigned	
Total Number of Pages in This Submission		Attorney Docket Number	40-001330US

ENCLOSURES (check all that apply)		
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Firm or Individual name	Jonathan Alan Quine, Reg. No. 41,261, Quine Intellectual Property Law Group, P.C.
Signature	
Date	July 14, 2004

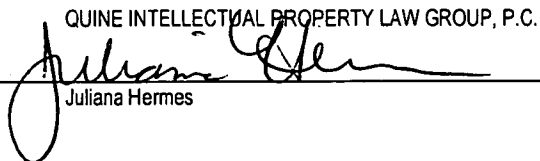
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QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C.

By


Juliana Hermes

Attorney Docket No. 40-001330US
Client Ref. No. 01-001330US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Erik C. Scher, et al.

Application No.: 10/778,009

Filed: February 11, 2004

For: NANOSTRUCTURE AND
NANOCOMPOSITE BASED
COMPOSITIONS AND
PHOTOVOLTAIC DEVICES

Examiner: Unassigned

Art Unit: 1753

INFORMATION DISCLOSURE
STATEMENT UNDER 37 CFR § 1.97 and
§ 1.98

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P.O. Box 1450
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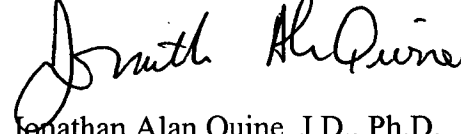
The references cited on attached form PTO-1449 are being called to the attention of the Examiner. Copies of the references are enclosed. It is respectfully requested that the cited information be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no

representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

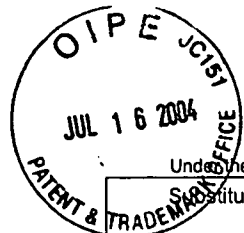
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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jonathan Alan Quine". The signature is fluid and cursive, with the first name "Jonathan" and last name "Quine" clearly distinguishable.

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Reg. No. 41,261

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Substitute for form 1449A-B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number	10/778,009
Filing Date	February 11, 2004
First Named Inventor	Erik Scher
Group Art Unit	1753
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U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
/TT/	1	5,260,957		Hakimi et al.	11-09-1993	
	2	5,293,050		Chapple-Sokol et al.	03-08-1994	
	3	5,354,707		Chapple-Sokol et al.	10-11-1994	
	4	5,422,489		Bhargava	06-06-1995	
	5	5,505,928		Alivisatos et al.	04-09-1996	
	6	5,571,612		Motohiro et al.	11-05-1996	
	7	5,585,640		Huston et al.	12-17-1996	
	8	5,613,140		Taira	03-18-1997	
	9	5,690,807		Clark Jr. et al.	11-25-1997	
	10	5,751,018		Alivisatos et al.	05-12-1998	
	11	5,897,945		Lieber et al.	04-27-1999	
	12	5,990,479		Weiss et al.	11-23-1999	
	13	5,997,832		Lieber et al.	12-07-1999	
	14	6,036,774		Lieber et al.	03-14-2000	
	15	6,048,616		Gallagher et al.	04-11-2000	
	16	6,136,156		El-Shall, et al.	10-24-2000	
	17	6,225,198	B1	Alivisatos et al.	05-01-2001	
	18	6,239,355	B1	Salafsky	05-29-2001	
	19	6,245,988	B1	Gratzel et al.	06-12-2001	
	20	6,306,736	B1	Alivisatos et al.	10-23-2001	
	21	6,322,901	B1	Bawendi et al.	11-27-2001	
	22	2001/0046244	A1	Klimov et al.	11-29-2001	
	23	2002/0040728	A1	Yoshikawa	04-11-2002	
	24	20020071952	A1	Bawendi et al.	06-13-2002	
	25	6,413,489	A1	Ying et al.	07-02-2002	
	26	2002/0130311	A1	Lieber et al.	09-19-2002	

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Signature

/Thanh Truc Trinh/

Date
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/TT/	27	2002/0172820	A1	Majumdar et al.	11-21-2002	
	28	2002/0192441	A1	Kalkan et al.	12-19-2002	
	29	6,501,091	B1	Bawendi et al.	12-31-2002	
	30	2003/0142944	A1	Sundar et al.	07-31-2003	
	31	2003/0226498	A1	Alivisatos et al.	12-11-2003	
	32	2004/0026684	A1	Empedocles	02-12-2004	

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
/TT/	33	JP	55-125681		Kuwano et al.	09-27-1980		
	34	WO	94/00887	A1	Yeda Research & Development Co. Ltd.	01-06-1994		
	35	WO	94/04497	A1	Ecole Polytechnique Federale de Lausanne (EPFL)	03-03-1994		
	36	WO	95/29924	A1	Ecole Polytechnique Federale de Lausanne (EPFL)	11-09-1995		
	37	WO	96/10282	A1	British Telecommunications Public Limited Co.	04-04-1996		
	38	EP	1087446	A2	Canon Kabuski Tokyo	03-28-2001		
	39	WO	02/17362	A2	President and Fellows of Harvard College	02-28-2002		
	40	WO	02/080280	A1	The Regents of the University of California	10-10-2002		
	41	WO	03/054953	A1	The Regents of the University of	07-03-2003		

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					California		
/TT/	42	WO	03/084292	A1	Massachusetts Institute of Technology	10-09-2003	
/TT/	43	WO	03/085700	A1	Nanosys, Inc.	10-16-2003	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
/TT/	44	Alivisatos (1996) "Perspectives on the Physical Chemistry of Semiconductor NanoCrystals." <u>J. Phys. Chem.</u> 100:13226-13239.	
	45	Alivisatos (2000) "Naturally Aligned Nanocrystals" <u>Science</u> , 289:736	
	46	Bjork et al. (2002) "One-dimensional steeplechase for electrons realized" <u>Nano Letters</u> 2, 86-90	
	47	Cao et al. (2000) "Growth and properties of semiconductor core/shell nanocrystals with InAs cores" <u>J. Am. Chem. Soc.</u> 122, 9692-9702	
	48	Colvin et al. (1994) "Light Emitting Diodes Made from Cadmium Selenide Nanocrystals and a Semiconducting Polymer." <u>Nature</u> 370-354-357.	
	49	Cui et al. (2000) "Doping and electrical transport in silicon nanowires" <u>J. Phys. Chem. B</u> 104, 5213-5216	
	50	Cui et al. (2001) "Diameter-controlled synthesis of single-crystal silicon nanowires" <u>Appl. Phys. Lett.</u> 78, 2214-2216;	
	51	Dabbousi et al. (1995) "Electroluminescence from CdSe quantum-dot/polymer composites." <u>Appl. Phys. Lett.</u> 66(11):1316-1318.	
	52	Dabbousi et al. (1997) "(CdSe)ZnS core-shell quantum dots: Synthesis and characterization of a size series of highly luminescent nanocrystallites" <u>J. Phys. Chem. B</u> 101, 9463-9475	
	53	Danek et al. (1996) "Synthesis of Luminescent Thin-Film CdSe/ZnSe Quantum Dot Composites Using CdSe Quantum Dots Passivated with an Overlayer of ZnSe." <u>Chem. Mater.</u> 8(1):173-180.	
	54	Diehl (1997) "Fraunhofer LUCOLEDs to replace lamps." <u>III-Vs Rev.</u> 10(1).	
	55	Duan et al. (2000) "General synthesis of compound semiconductor nanowires" <u>Adv. Mater.</u> 12, 298-302	
	56	Empedocles et al. (1996) "Photoluminescence Spectroscopy of Single CdSe Nanocrystallite Quantum Dots." <u>Phys. Rev. Lett.</u> 77(18):3873-3876.	

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/TT/	57	Empedocles et al. (1997) "Quantum-Confined Stark Effect in Single CdSe Nanocrystallite Quantum Dots." <u>Science</u> , 278:2114-2117.	
	58	Greenham et al., (1996) "Charge separation and transport in conjugated-polymer/semiconductor-nanocrystal composites studied by photoluminescence quenching and photoconductivity" <u>Phys. Rev. B</u> 54(24):17628-17637.	
	59	Greenham et al. (1997) "Charge separation and transport in conjugated polymer cadmium selenide nanocrystal composites studied by photoluminescence quenching and photoconductivity." <u>Synthetic Metals</u> 84:545-546.	
	60	Gudiksen et al. (2000) "Diameter-selective synthesis of semiconductor nanowires" <u>J. Am. Chem. Soc.</u> 122, 8801-8802	
	61	Gudiksen et al. (2001) "Synthetic control of the diameter and length of single crystal semiconductor nanowires" <u>J. Phys. Chem. B</u> 105,4062-4064	
	62	Gudiksen et al. (2002) "Growth of nanowire superlattice structures for nanoscale photonics and electronics" <u>Nature</u> 415, 617-620	
	63	Guha et al. (1997) "Hybrid organic-inorganic semiconductor-based light-emitting diodes." <u>J. Appl. Phys.</u> 82(8):4126-4128.	
	64	Hines et al. (1996) "Synthesis and Characterization of Strongly Luminescing ZnS-Capped CdSe Nanocrystals." <u>J. Phys. Chem.</u> 100-468-471.	
	65	Hu et al. (2001) "Linearly polarized emission from colloidal semiconductor quantum rods." <u>Science</u> 292:2060-2063.	
	66	Huynh, et al., (1999) "CdSe Nanocrystal Rods/Poly(3-hexylthiophene) Composite Photovoltaic Devices" <u>Adv. Materials</u> 11(11):923-927.	
	67	Huynh, et al., (2002) "Hybrid Nanorod-Polymer Solar Cells" <u>Science</u> 295(5564):2426-2427	
	68	Jun et al. (2001) "Controlled synthesis of multi-armed CdS nanorod architectures using monosurfactant system" <u>J. Am. Chem. Soc.</u> 123, 5150-5151	
	69	Kortan et al. (1990) "Nucleation and Growth of CdSe on ZnS Quantum Crystallite Seeds and Vice Versa, in Inverse Micelle Media." <u>J. Am. Chem. Soc.</u> 112:1327-1332.	
	70	Kuno et al. (1997) "The band edge luminescence of surface modified CdSe nanocrystallites: Probing the Luminescing state." <u>J. Chem. Phys.</u> 106(23):9869-9882.	
	71	Lawless et al. (1995) "Bifunctional Capping of CdS Nanoparticles and Bridging to TiO2." <u>J. Phys. Chem.</u> 99:10329-10335.	
	72	Lee et al. (2000) "Full color Emission from II-VI Semiconductor Quantum Dot-Polymer composites." <u>Adv. Mater.</u> 12(15):1102-1105.	
	73	Li et al. (2001) "Band gap variation of size- and shape-controlled colloidal CdSe quantum	

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		rods" <u>Nanoletters</u> 1, 349-351.	
/TT/	74	Li et al. (2002) "Semiconductor nanorod liquid crystals" <u>Nano Letters</u> 2: 557-560	
	75	Liu et al. (2001) "Sol-Gel Synthesis of Free-Standing Ferroelectric Lead Zirconate Titanate Nanoparticles" <u>J. Am. Chem. Soc.</u> 123, 4344	
	76	Manna et al. (2000) "Synthesis of Soluble and Processable Rod-, Arrow-, Teardrop-, and Tetrapod-Shaped CdSe Nanocrystals" <u>J. Am. Chem. Soc.</u> 122, 12700-12706	
	77	Manna et al. (2002) "Epitaxial growth and photochemical annealing of graded CdS/ZnS shells on colloidal CdSe nanorods" <u>J. Am. Chem. Soc.</u> 124, 7136-7145	
	78	Matsumoto (1996) "Preparation of Monodisperse CdS Nanocrystals by Size Selective Photocorrosion." <u>J. Phys. Chem.</u> 100(32):13781-13785.	
	79	Morales et al. (1998) "A laser ablation method for the synthesis of crystalline semiconductor nanowires" <u>Science</u> 279, 208-211	
	80	Murray et al. (1993) "Synthesis and Characterization of Nearly Monodisperse CdE (E = S, Se, Te) Semiconductor Nanocrystallites" <u>J. Am. Chem. Soc.</u> 115, 8706	
	81	Nirmal et al. (1996) "Fluorescence Intermittency in single Cadmium Selenide Nanocrystals." <u>Nature</u> , 383-802-804.	
	82	Peng et al. (1997) "Epitaxial growth of highly luminescent CdSe/CdS core/shell nanocrystals with photostability and electronic accessibility" <u>J. Am. Chem. Soc.</u> 119, 7019-7029	
	83	Peng et al. (2000) "Shape control of CdSe nanocrystals" <u>Nature</u> 404, 59-61	
	84	Puntes et al. (2001) "Colloidal nanocrystal shape and size control: The case of cobalt" <u>Science</u> 291, 2115-2117	
	85	Scher et al. (2003) "Shape Control and Applications of Nanocrystals." <u>Philosophical Transactions of the Royal Society London, Series A.</u> 361:241-257	
	86	Schlamp et al. (1997) "Improved efficiencies in light emitting diodes made with CdSe(CdS) core/shell type nanocrystals and a semiconducting polymer." <u>Journal of Applied Physics</u> 82:5837-5842.	
	87	Urban et al. (2002) "Synthesis of single-crystalline perovskite nanowires composed of barium titanate and strontium titanate" <u>J. Am. Chem. Soc.</u> , 124, 1186	
	88	Wu et al. (2002) "Block-by-block growth of single-crystalline Si/SiGe superlattice nanowires" <u>Nano Letters</u> 2, 83-86	
	89	Yun et al. (2002) "Ferroelectric Properties of Individual Barium Titanate Nanowires Investigated by Scanned Probe Microscopy" <u>Nanoletters</u> 2, 447.	

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